

**REMARKS**

This Amendment, submitted in response to the Office Action dated January 2, 2004, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

As a preliminary matter, the finality of the present Office Action should be withdrawn. The Examiner states on page 6 of the Office Action that finality is proper because of Applicant's claim amendments.

However, the Applicant merely amended the claims to include the subject matter of previously pending claims. Claim 1 was amended to include the subject matter of claim 2, which was previously dependent upon claim 1. Claim 18, which was previously dependent on claim 17, was rewritten in independent form to include the subject matter of claim 17. Claim 18 was also amended to include the subject matter of claim 19. Claim 19 was previously dependent on claim 18.

Since the claims were merely amended to include previously pending subject matter, no new matter has been added. Furthermore, the Examiner provides a new basis for rejecting the claims. MPEP 706.07(a) ("...a second or subsequent office action on the merits shall be final, **except** where the Examiner raises a new ground of rejection that is **not necessitated** by the applicant's amendment of the claims...."). Therefore, the finality of the present Office Action should be withdrawn.

Claims 1, 3-14, 18, 20-29, and 31 are pending in the present application. Claims 2, 15-17 and 30 have been previously canceled. Claim 19 has presently been canceled. Claims 1, 3-14,

18-29 and 31 have rejected under 35 U.S.C. § 103(a) as being unpatentable over Walance et al (6,466,649) in view of Cabot (5,649,304). Applicant submits the following in traversal of the rejections.

Walance describes a system for detecting bridged taps by using frequency domain reflectometry. A single frequency is generated and propagates down a link and is reflected back from the energy reflection discontinuities. See abstract. The sinusoidal waveform has a frequency which is linearly varied in a stepwise manner. At each frequency step, the line was allowed to settle and the steady state response was sampled and stored for that frequency bin. Col. 8, lines 31-43.

Cabot describes a system for distortion measurement of a signal transfer device. A computer program generates a multitone test signal of predetermined duration which is stored in memory. The test signal is read and converted to analog form. The test signal is applied to input pins and frequency response, harmonic distortion, intermodulation distortion, phase distortion and flutter are measured by a CPU by analyzing the output signal measured at the output pins . See abstract and Fig. 2.

As a preliminary matter, Cabot teaches away from the present invention. In Cabot, a plurality of frequencies are simultaneously applied to the input and their corresponding amplitudes at the output are identified. Col. 6, lines 34-43. However, as indicated on page 1 of the specification for the present invention and in Figs. 1 and 2 of the present invention, this would require applying a test signal at both the operator end and measuring an output signal at the subscriber end. As opposed to time domain reflectometry, as described in the present

invention, which can provide information about the whole length of the line without testing both the input and the output by applying test signals at one end and measuring the reflected received signals at the same end .

Furthermore, it is unlikely that Walance and Cabot would be combined to teach the present invention. In particular, Walance teaches the use of a sequential signal in order to detect a defect. Col. 1, lines 60-67. On the other hand, Cabot teaches the use of multiple simultaneous signals. Cabot indicates that unlike the prior art which uses sequential signals, Cabot increases the speed at which results are obtained. See Summary of the Invention. Since Cabot teaches away from Walance, one of ordinary skill in the art is not likely to combine the references.

Furthermore, any indication by the Examiner that the combination is obvious would merely be a result of impermissible hindsight. In particular, a substantial reconstruction would be required in order to modify Walance to operate using multiple frequencies. This evinces that the Examiner's reasoning is merely a result of hindsight. MPEP 2143.01.

### **Claims 1 and 18**

The Examiner states that Walance does not teach that the generating is performed so that the frequency bands of adjacent ones of the plurality of pulses overlap. That is, generating a plurality of pulses *simultaneously*. However, the Examiner states that Cabot suggests this aspect of claims 1 and 18, citing summary and Fig. 2 of Cabot in support.

It would be apparent to one of ordinary skill in the art that simultaneous does not equate to overlap. In particular, merely because pulses are generated simultaneously, does not mean

that the pulses overlap. This distinction is made even more apparent by claim 12 which describes that the plurality of pulses are generated *simultaneously*.

Regardless, there is no indication that any of the pulses of Cabot are overlapping as described by claims 1 and 18.

Moreover, it does not appear the overlapping of signals is desired in Cabot. If test tones were chosen so that the harmonics were allowed to overlap, it would be possible for harmonics with opposing phases to cancel thereby producing lowered, incorrect distortion readings. Col. 7, lines 28-44. Therefore, Cabot teaches away from the overlapping described in claims 1 and 18.

For the above reasons, claims 1 and 18 and their dependent claims should be deemed patentable.

### **Claims 3 and 20**

Claims 3 and 20 describe that the overlapping of the frequency bands is such that after reflection and processing, the frequency spectrum of the plurality of pulses is practically flat. The Examiner cites Cabot col. 6, lines 34 to col. 7, line 44 for teaching claims 3 and 20.

First of all, as Cabot is not concerned with reflected signals, it is not possible to derive any characteristic of the reflected pulses from Cabot. Furthermore, the respective column and lines describes using a plurality of frequencies, amplitudes of the frequencies between those corresponding to the test tones have been interpolated in order to obtain a continuous curve, weighting the input amplitudes, and root sum square additions of tone frequencies in order to prevent wow and flutter. At no point does the aspect of Cabot cited by the Examiner, describe

that the plurality of pulses are practically flat. Therefore, claims 3 and 20 should be deemed patentable.

**Claim 4**

Claim 4 describes providing each of the plurality of pulses with a given amplification or attenuation and providing pulses of the received signals with the corresponding attenuation or amplification. The Examiner cites Walace col. 4, lines 36-67 for teaching claim 4.

The respective column and lines cited by the Examiner describes the elements of the bridged tap detection arrangement. A test head contains test signal generation and processing circuitry that is operative to execute frequency domain reflectometry. The test head creates a frequency-swept sinusoidal waveform and conducts digitally based analysis on the line's response to those test signals in terms of fluctuations in impedance caused by the reflections.

There is no indication that each of the plurality of pulses is provided with a given amplification or attenuation or that pulses of the received signals are provided with a corresponding attenuation or amplification. Therefore, claim 4 should be deemed patentable.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.116  
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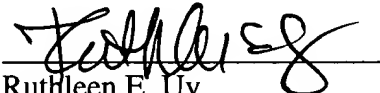
SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Respectfully submitted,

  
Ruthleen E. Uy  
Registration No. 51,361

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